

What Do Renewable Generators Need from the RECs Market

Presented to: Tenth National Green Power Marketing Conference
Austin, Texas
October 24, 2005

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VERA

***Different Technologies
Have
Different REC Needs***

Renewable Resources in Texas REC Program

| RESOURCE | QUANTITY IN REC PROGRAM | |
|--|-------------------------|---------------|
| Wind | 1,348.2 MW | 95.9 % |
| Biogas | 47.7 MW | 3.4% |
| Hydro (old, small) | 10.3 MW | 0.7% |
| Solar (PV) | 0.2 MW | .02% |
| Generation Offsets (solar heating, geothermal) | | none |

** Another 500+ MW of Wind expected by end 2005*

Texas Background

Utility Polls Triggered Texas Renewable Market

Utility Customer Deliberative Poll Results for 8 Utilities in Texas

First Choice Preference (assuming cost same)

49% prefer **Renewables** (Solar, Wind, Biomass)

31% prefer **Reduce Need** (Energy Efficiency)

14% prefer **Fossil** (Gas, Coal)

5% prefer **Buy & Transport** from others

Willingness to Pay More

+\$5.00/month more for **Renewables**

+\$2.00/month more for **Efficiency**

\$0 more for **coal, natural gas & purchase**

Texas Renewable Energy Development Policy

A Near-Complete Package:

Retail Sales (Renewable Energy Tariff)
Fuel Use & Emissions Disclosure
RPS (SB7 - 1999)
RECs
RPS Expansion (SB20 - 2005)

For more detail on these, go to:

www.vera.com

www.TexasRenewables.com

RPS

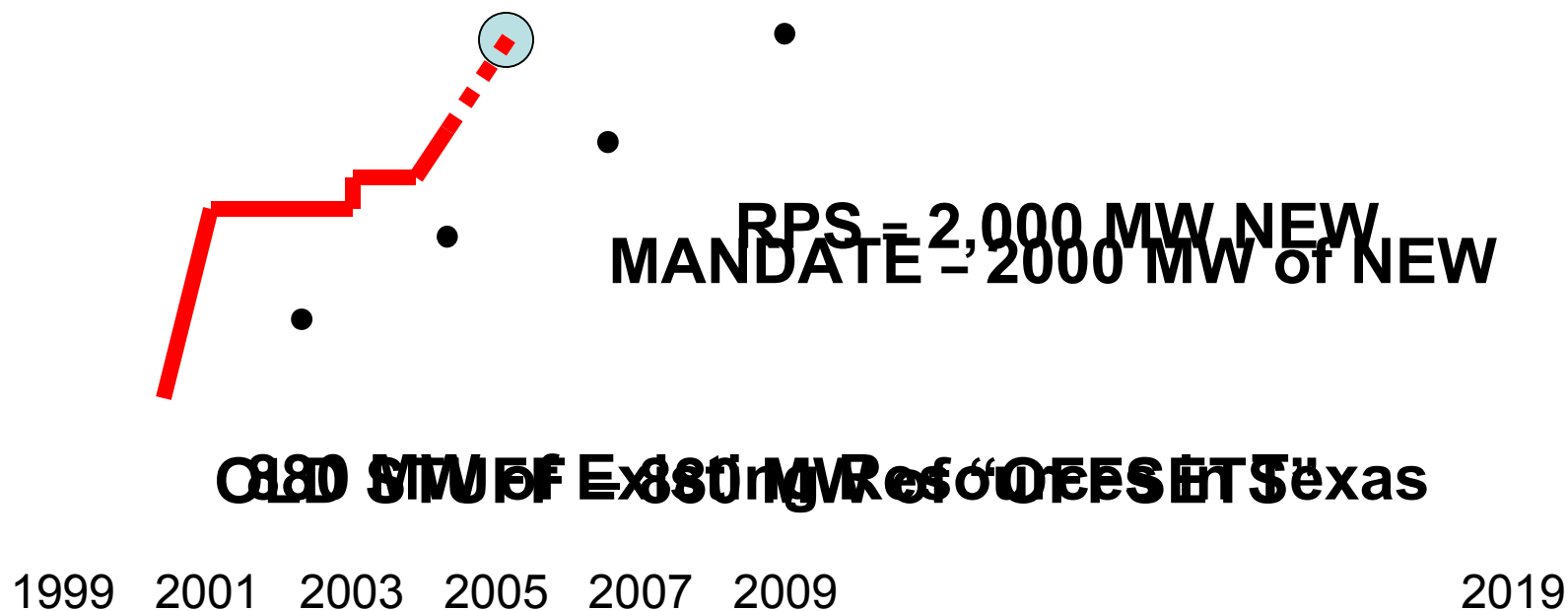
(Renewable Portfolio Standard)

- ***Promotes USE of Renewables***
- ***Sets minimum levels of USE***
- ***Penalties for insufficient USE***

Texas Policy is Working (Ahead of Schedule).... But

Texas may meet Goal by 2006, but 2 problems:

- 1) No New Transmission Lines Built for New Wind
- 2) Lack of Diversity of Resources



The Scripps Howard

TEXAS POLL

Spring 2005

Q: As Texas grows, the state will need additional energy supplies. Of the following three options, which one do you prefer to meet the state's future electric energy needs?

| | |
|-------------------|-------------|
| Renewables | 79 % |
|-------------------|-------------|

| | |
|-------------|------------|
| Coal | 6 % |
|-------------|------------|

| | |
|------------|------------|
| LNG | 5 % |
|------------|------------|

***What is a
REC ?***

What is a REC ?

REC = Tracking Tool with Market-Based Value

- ***RPS compliance***
- ***Versatile “Certificate of
Authenticity” for renewables***
- ***Building block for
broader renewable markets***

Historical Problem – Renewables Too Expensive

**Market
Value
of
Energy**

**Renewable
Energy**

Components of Texas Renewable Energy

All “**Renewable Attributes**” of the generation convey with the credit

Market
Price

REC

**Market
Value
of
Energy**

REC = simple information / unique ownership

Information on a Texas REC

GENERATOR I.D. - *where (King Mtn, Upton Co.)*

WHEN PRODUCED - *what quarter (1st Q, 2004)*

UNIQUE SERIAL NUMBER - *numbered MWh*

ATTRIBUTES – *Environmental info*

Credible

Stable

Drive New Installations

Must earn TRUST of Market & Consumers

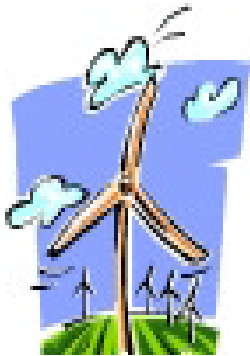
Texas' Compromise for Existing Resources

RECs – tradable; *limited to new resources and those existing resources that need support (substantiate over-market costs -- less than 2 MW)*

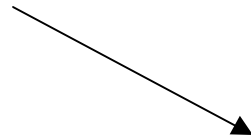
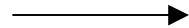
REC Offsets – NOT tradable; *ensures recognition for using renewables, proportional relief from obligation to acquire new renewables (via RECs); may NOT be traded)*

Texas Renewable Portfolio Standard (RPS)

PROGRAM BASICS

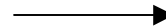


**Renewable
Generators** earn
RECs for every
MWh produced



**1 REC =
1 MWH**

*Electricity
can be sold
separately*



Retailers MUST
acquire & retire RECs
= a specified % of
their retail sales

(or Pay Penalty)

Only Valid Claim Comes After REC is Retired

Trading Period = REC Banking

year produced plus 2 additional years

Valid Claim = Retired REC

*once REC is retired; claim to attributes
is permanent*



**1 REC =
1 MWH**

Program Administrator

Track all REC Retirements

RPS Compliance

Voluntary

***RPS + RECs make
Voluntary
Programs work***

Texas Renewable Energy Credits Market

RPS – minimum level of NEW

OLD STUFF – supported by “OFFSETS”

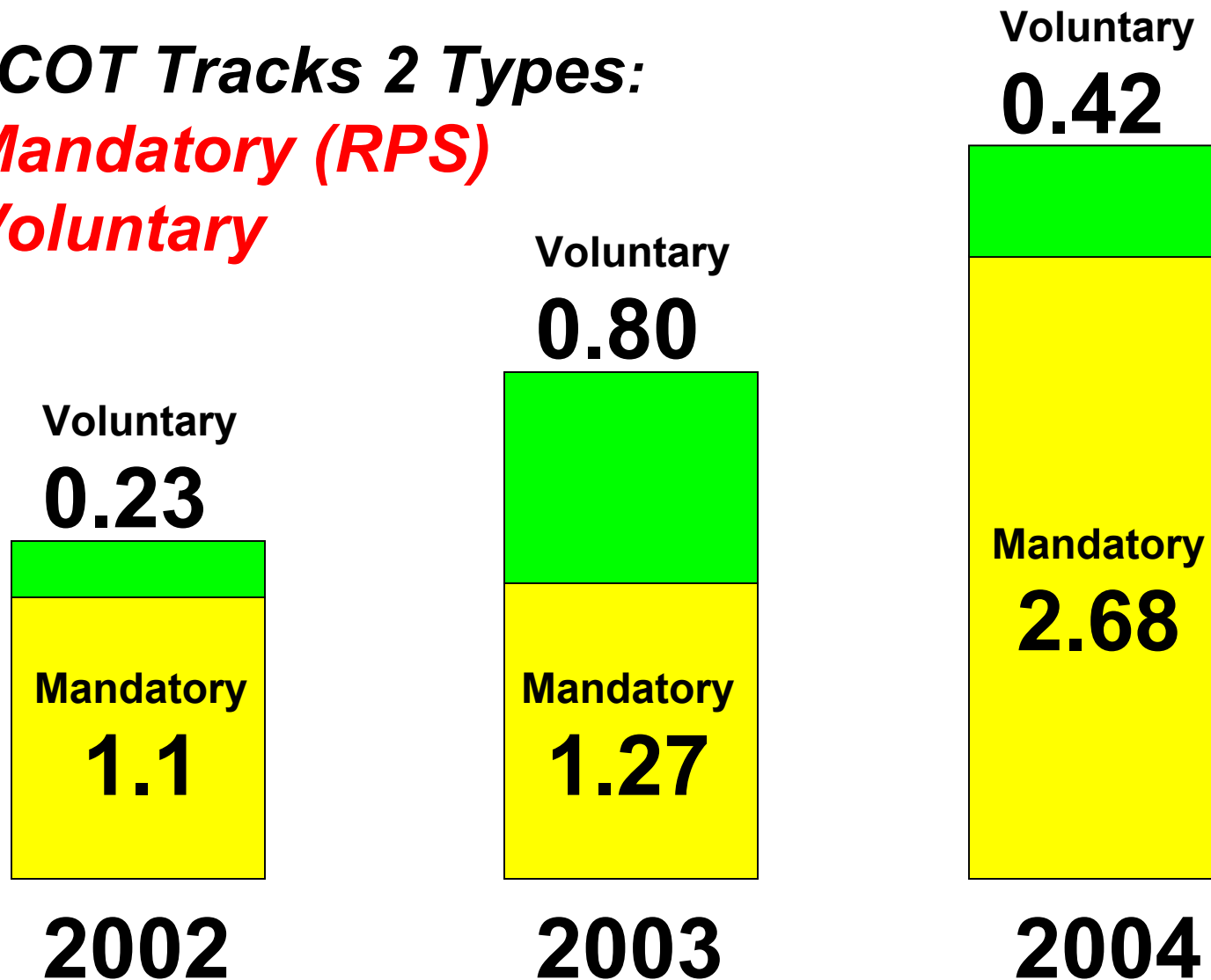
1999 2001 2003 2005 2007 2009

2019

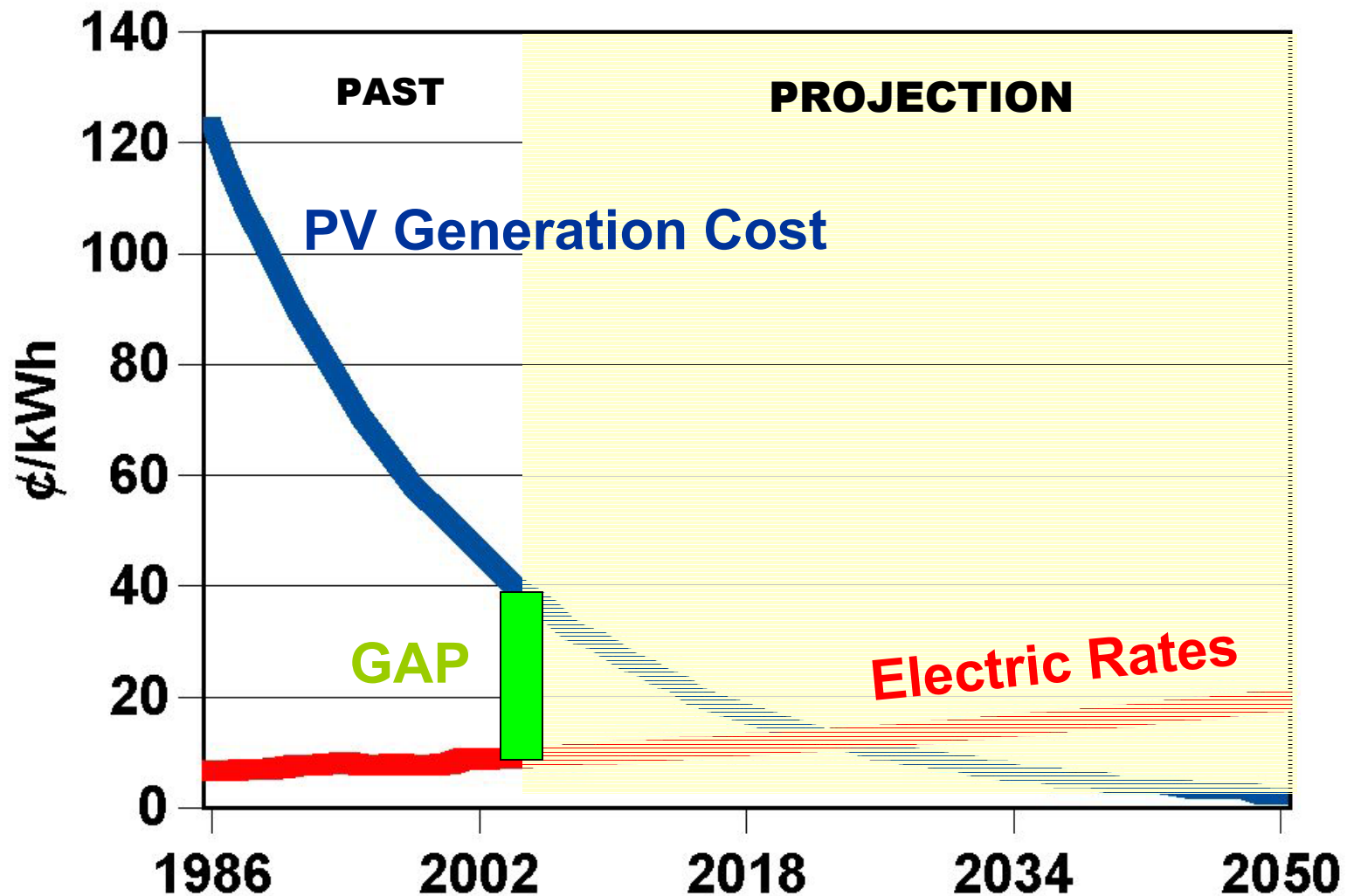
Texas REC Retirements 2002 – 2004 (millions)

ERCOT Tracks 2 Types:

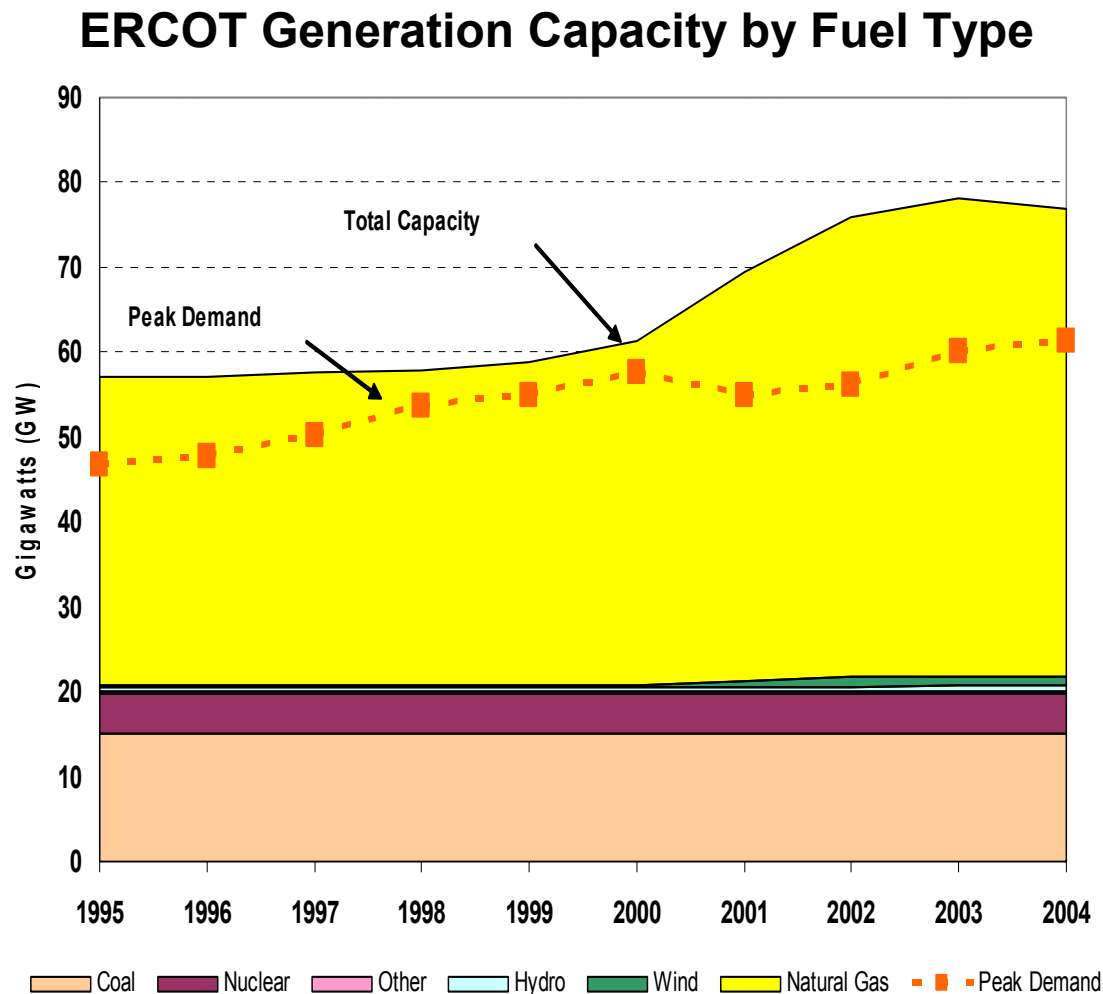
- **Mandatory (RPS)**
- **Voluntary**



Solar RECs Need & Deserve Special Attention



Why Not Just Let the Market Work ?



**PUBLIC UTILITY COMMISSION
OF TEXAS**



Newton Said

An object at rest tends to stay at rest and an object in motion tends to stay in motion

Texas RPS Results – Newton's Law Proved Again

Renewables Purchased by Texas Private-Sector Utilities

with No RPS requirement in 2002

6 Companies = 1 MW

with RPS requirement in 2002

**3 Companies = 310 MW required
+ 300 MW extra!**

SUMMARY: What Generators Need from RECs

Low Cost Resources (e.g. Wind & Biogas)

High Integrity

Emissions Reduction Value

Drive New Installations

High Cost / High Value Resources (e.g. PV)

Promote Diversity (Stand Alone RPS)

Creative, Thoughtful Approaches